



UNITED STATES PATENT AND TRADEMARK OFFICE

cen

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/792,090	03/04/2004	Dong-Hoon Kim	6192.0331.US	4090

32605 7590 04/12/2007
MACPHERSON KWOK CHEN & HEID LLP
2033 GATEWAY PLACE
SUITE 400
SAN JOSE, CA 95110

EXAMINER

HAN, JASON

ART UNIT	PAPER NUMBER
----------	--------------

2875

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/792,090	Applicant(s) KIM ET AL.	
	Examiner Jason M. Han	Art Unit 2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21,22,24,25,27-30,32,38 and 41-43 is/are pending in the application.
- 4a) Of the above claim(s) 33-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21,22,24,25,27-30,32,38 and 41-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed January 24, 2007 have been fully considered but they are not persuasive.
2. At present, the prior art to Kohara et al. (U.S. Patent 6,633,722 B1) remains commensurate to the scope of the claims as stated by the Applicant and as broadly interpreted by the Examiner [MPEP 2111], which is elucidated in the rejection below.
3. It further remains clear to the Examiner that Kohara sufficiently teaches all structural limitations, including the amendment incorporating the limitation, “each having an obtuse protrusion and a first (second) vertex angle”, which is again corroborated in the rejection below. Applicant should be aware that the above limitation does not clearly establish the first and second triangular prisms from having an obtuse protrusion formed on surfaces thereof, and whereby, the Examiner has taken a broad interpretation in understanding the triangular prisms each having an obtuse protrusion as a characteristic part therein.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

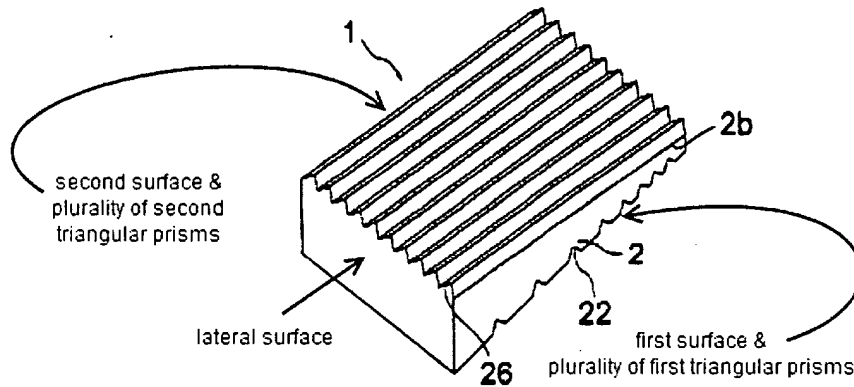
A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 21-22, 24-25, and 27-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Kohara et al. (U.S. Patent 6,633,722 B1).

5. With regards to Claim 21, Kohara discloses a light guide plate including:

- First and second main surfaces facing each other [Figures 9-11];



- At least one lateral surface [Figures 9-11] connecting the first and second main surfaces;
- A plurality of first triangular surfaces [Figures 9-11: (22)] formed on the first main surface and aligned in a row to a first direction, each having an obtuse protrusion [Column 16, Lines 5-21] and a first vertex angle [Figure 3; Column 16, Lines 5-21]; and
- A plurality of second triangular surfaces [Figures 9-11: (26, 261)] formed on the second main surface and aligned in a row to a second direction, each having an obtuse protrusion [Column 22, Lines 13-14] and a second vertex angle different from the first vertex angle [Figure 10; Column 22, Lines 13-14];
- Wherein the first vertex angle ranges from about 100° to about 120° [Column 16, Lines 19-21], and the second vertex angle ranges from about 120° to about 140° [Column 22, Lines 13-14].

6. With regards to Claim 22, Kohara discloses the first vertex angle being obtuse [Column 16, Lines 5-21].
7. With regards to Claim 24, Kohara discloses the first vertex angle being about 108 degrees [Column 16, Lines 5-21].
8. With regards to Claim 25, Kohara discloses the second vertex angle being obtuse [Column 22, Lines 13-14].
9. With regards to Claim 27, Kohara discloses the second vertex angle being about 135 degrees [Column 22, Lines 13-14].
10. With regards to Claim 28, Kohara discloses the second direction being substantially perpendicular to the first direction [Figures 9-11; note drawing above].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 21-22, 24-25, and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohara et al. (U.S. Patent 6,633,722 B1).

See MPEP § 2131.02. A 35 U.S.C. 102 /103 combination rejection is permitted if it is unclear if the reference teaches the range with "sufficient specificity."

Kohara discloses the claimed invention as cited above, but it is not clear if the reference of Kohara teaches the various ranges/angles for the vertices with "sufficient specificity".

Since the ranges disclosed within the claims fall within the broad range identified by Kohara, there is an anticipation of the vertex angles identified in appropriately affecting the illumination within the light guide. However, it remains obvious, if the reference does not teach the range with “sufficient specificity”, to one having ordinary skill in the art at the time the invention was made to provide a narrower range or value within the broad range of Kohara in order to optimize or appropriately affect the illumination according to a user’s preference. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

12. Claims 29-30, 32, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohara et al. (U.S. Patent 6,633,722 B1) as applied to Claim 21 above, and further in view of Large (U.S. Patent 6,043,936).

Kohara discloses the claimed invention as cited above, but does not specifically teach at least one of the plurality of first triangular prisms having a first prism surface and a second prism surface, wherein the first prism surface and the second prism surface includes a concavo-convex pattern (re: Claim 29); wherein the concavo-convex pattern has a triangular prism shape (re: Claim 30); wherein the concavo-convex pattern has a rounded corner (re: Claim 32); nor wherein at least one of the triangular prisms has a curved convex ridge of varying height (re: Claim 42).

Large teaches a light guide plate having a plurality of first prisms [Figure 1: (2)] including first and second prism surfaces [Figures 1&4: (5)] with concavo-convex patterns/curved vertex ridge. In addition, Large teaches the concavo-convex pattern/curved vertex ridge being a triangular prism shape, but does not specifically teach said pattern/curved

Art Unit: 2875

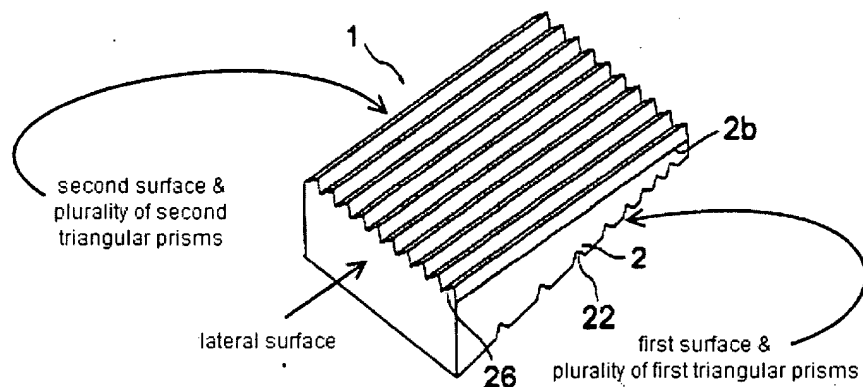
vertex ridge having a rounded corner or being of varying height. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the concavo-convex pattern/curved vertex ridge to have a rounded corner or being of varying height, since it has been held to be within the general skill of a worker that mere change of form or shape of an invention involves only routine skill in the art. *Span-Deck Inc. v. Fab-Con, Inc.* (CA 8, 1982) 215USPQ 835. In this case, providing a rounded corner or being of varying height would produce a different or desired optical effect.

It also would have been obvious to one ordinarily skilled in the art at the time of invention to modify the plurality of first triangular prisms of Kohara to incorporate the first and second prism surfaces with various concavo-convex patterns/curved vertex ridge, as principally taught by Large, in order to provide appropriate diffusion/diffraction over a wide range of viewing and illumination angles [see Abstract of Large].

13. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kohara et al. (U.S. Patent 6,633,722 B1) in view of Katsu et al. (U.S. Patent 6,692,133 B2).

Kohara discloses a light guide plate including:

- A first surface [Figures 9-11] having a first prism pattern [Figures 9-11: (22)], whereby the first prism pattern has a plurality of first prisms aligned in a row to a first direction and the plurality of prisms having an obtuse protrusion [Column 16, Lines 5-21] and a first triangular cross-sectional shape [Figure 3];



- A second surface [Figures 9-11] having a second prism pattern [Figures 9-11: (26, 261)], whereby the second prism pattern has a plurality of second prisms aligned in a row to a second direction and the plurality of second prisms having an obtuse protrusion [Column 22, Lines 13-14] and a second triangular cross-sectional shape [Figure 10];
- Wherein the first surface faces the second surface [Figures 9-11]; and
- Wherein the first triangular cross-sectional shape has a first vertex angle [Figure 3; Column 16, Lines 5-21] that is different from a second vertex angle [Figure 10; Column 22, Lines 13-14] of the second cross-sectional shape; and
- Wherein the first vertex angle ranges from about 100° to about 120° [Column 16, Lines 19-21], and the second vertex angle ranges from about 120° to about 140° [Column 22, Lines 13-14].

Kohara does not specifically teach a liquid crystal display including a liquid crystal display panel, a backlight assembly incorporating the light guide, and a module that accommodates the liquid display panel and the backlight assembly.

Katsu teaches a liquid crystal display including a module [Figure 1: (11, 17)] that accommodates a liquid crystal display panel [Figure 1: (13)] and a backlight assembly [Figure 1: (10)].

It would have been obvious to one ordinarily skilled in the art at the time of invention to incorporate the light guide of Kohara within the liquid crystal display and module of Katsu in order to provide a robust and illumination efficient LCD package that houses and protects the various components (i.e., LCD panel, backlight assembly) [See Kohara: Column 1, Lines 7-9].

14. Claims 41 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohara et al. (U.S. Patent 6,633,722 B1) in view of Katsu et al. (U.S. Patent 6,692,133 B2) as applied to Claim 38, and further in view of Large (U.S. Patent 6,043,936).

Kohara in view of Katsu discloses the claimed invention as cited above, but does not specifically teach the plurality of first prisms having a first prism surface and a second prism surface, wherein the first prism surface and the second prism surface includes a concavo-convex pattern (re: Claim 41); nor wherein at least one of the triangular prisms has a curved vertex ridge of varying height (re: Claim 43).

Large teaches a light guide plate having a plurality of first prisms [Figure 1: (2)] including first and second prism surfaces [Figures 1&4: (5)] with concavo-convex patterns/curved vertex ridge. In addition, Large teaches the concavo-convex pattern/curved vertex ridge being a triangular prism shape, but does not specifically teach said pattern/curved vertex ridge having a rounded corner or being of varying height. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the concavo-convex pattern/curved vertex ridge to have a rounded corner or being of varying height,

since it has been held to be within the general skill of a worker that mere change of form or shape of an invention involves only routine skill in the art. *Span-Deck Inc. c. Fab-Con, Inc.* (CA 8, 1982) 215USPQ 835. In this case, providing a rounded corner or being of varying height would produce a different or desired optical effect.

It also would have been obvious to one ordinarily skilled in the art at the time of invention to modify the plurality of first triangular prisms of Kohara in view of Katsu to incorporate the first and second prism surfaces with various concavo-convex patterns, as principally taught by Large, in order to provide appropriate diffusion/diffraction over a wide range of viewing and illumination angles [see Abstract of Large].

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the even a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

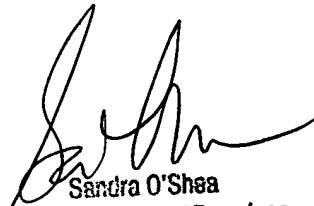
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Han whose telephone number is (571) 272-2207. The examiner can normally be reached on 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jason M Han
Examiner
Art Unit 2875

JMH (4/6/2007)


Sandra O'Shea
Supervisory Patent Examiner
Technology Center 2800